

REMARKS

As discussed below, FIGs. 2-5, and paragraphs [0007], [0048], [0049], [0054], [0055], and [0070] have been amended to correct informalities. Claims 13, 14, and 32 have been amended. Support for the amendments to claims 13, 14, and 32 may be found throughout the specification. No new matter has been added. Claims 30 and 31 have been cancelled without disclaimer of the subject matter contained therein or prejudice to the Applicants' right to file any continuing applications directed thereto. Upon entry of this Amendment, claims 1-29 and 32 remain pending.

In the Office Action dated June 22, 2005, the drawings were objected to because K_{PA} disclosed in paragraph [0045] was not shown in the drawings. Applicants have amended FIGs. 2-4 to show K_{PA} . Support for this amendment to FIGs. 2-4 may be found – at least – in paragraph [0045]. Applicants respectfully request that the objection to the drawings be withdrawn.

In the Office Action, the disclosure was objected to for two “informalities.” First, the disclosure was objected to because in paragraph [0048], both the heater and the radiation source were assigned reference number 2. Paragraph [0048] has been amended so that the reference number of the radiation source is 2a. FIG. 5 has also been amended to show 2a pointing to the radiation source as described in paragraph [0048].

Second, the disclosure was objected to because paragraph [0049] discloses that the temperature is maintained at a range of plus or minus 50 degrees from a ‘certain average operating temperature,’ but fails to disclose the average temperature. Although Applicants do not regard this as an informality, Applicants have amended paragraphs [0007], [0049], [0054], [0055], and [0070] to clarify the language contained therein.

In view of the amendments made to the specification, Applicants respectfully request that the objection to the disclosure be withdrawn.

In the Office Action, claims 20 and 26 were objected to because of an informality of “an average operating temperature” not being ‘disclosed. In view of the amendments to paragraphs [0007], [0049], [0054], [0055], and [0070], Applicants respectfully submit that “an average operating temperature” is disclosed multiple times. Accordingly, Applicants respectfully request that the objection to claims 20 and 26 be withdrawn.

In the Office Action, claim 30 was objected to because the structural relationship between the receiving and transmitting means, the heating means and the rest of the structure of the apparatus is not clear. Although Applicants disagree with the Examiner's assertion,

claim 30 has been cancelled, thereby mooting the objection. Accordingly, Applicants respectfully request that the objection to claim 30 be withdrawn.

In the Office Action, claims 1, 3-8, 12-15, and 18-32 were rejected under 35 U.S.C. § 102(b) are being anticipated by Mori et al. ("Mori"), U.S. Patent No. 5,906,429. Applicants respectfully traverse this rejection.

Independent claim 1 recites a lithographic apparatus that includes, *inter alia* "at least one heater for heating said collector when said collector receives substantially no radiation from said first radiation source." Mori does not disclose or suggest all of the features of claim 1.

Mori discloses an optical illumination device that reflects and condenses light from a mercury-arc lamp by a light reflecting and condensing member. (Mori at Abstract.) In one embodiment, "a heating device may also be provided to prevent white ammonium sulfate powder from adhering to the elliptical mirror 2A." (Mori at col. 14, lns. 25-27.) The heating device, in the form of a heating coil 10, is used "to maintain the temperature of the elliptical mirror 2A at a temperature of 120° C (the decomposition temperature of ammonium sulfate) or higher." (Mori at col. 14, lns. 33-35.) Mori also explains that "[t]he heating coil 10 need not be subjected to very high current because the elliptical mirror 2A is near the mercury-arc lamp 1 that serves as a heat source." (Mori at col. 14, lns. 35-38.) Mori further explains that "[a] heat insulator can be provided instead of the heating device for the light reflecting and condensing element or elliptical mirror 2A." (Mori at col. 14, lns. 39-41.) Mori does not disclose or suggest that the heating device heats the elliptical mirror when the mirror is not receiving radiation from the mercury-arc lamp, and there would be no motivation to do so in view of the purpose for providing such a heating device in Mori.

Applicants respectfully submit that claims 1 and claims 2-12 that depend therefrom are patentable over Mori because Mori does not teach – at least – a lithographic apparatus that includes "at least one heater for heating said collector when said collector receives substantially no radiation from said first radiation source." Accordingly, Applicants respectfully request that the rejection to claim 1 and claims 3-8 and 12 that depend therefrom be withdrawn.

Independent claim 13 recites a collector for use in a lithographic apparatus. The collector includes, *inter alia*, "a heater thermally coupled to said reflecting elements and constructed to heat said reflecting elements when said reflecting elements receive substantially no radiation from said first radiation source."

Mori is discussed above. Because Mori does not disclose or suggest a heater that is constructed to heat reflecting elements when the reflecting elements receive substantially no radiation from the radiation source, Applicants respectfully submit that claim 13 is patentable over Mori. Accordingly, Applicants respectfully request that the rejection to claim 13 be withdrawn.

Independent claim 14 recites a method of manufacturing a device that includes, *inter alia*, “maintaining the collector at a substantially constant operating temperature by selectively heating the collector, even when the collector receives substantially no radiation from the first radiation source.”

Mori is discussed above. Mori does not disclose or suggest a method of manufacturing a device that includes – at least – the feature of maintaining the collector at a substantially constant operating temperature, even when the collector receives substantially no radiation from the first radiation source, as recited by claim 14. Accordingly, Applicants respectfully submit that claim 14 and claims 15-29 that depend therefrom are patentable over Mori and respectfully request that the rejection to claims 14, 15, and 18-29 be withdrawn.

Claims 30 and 31 have been cancelled, thereby mooted the rejection of claims 30 and 31.

Independent claim 32 recites a method of manufacturing a device that includes, *inter alia*, “maintaining the collector at a substantially constant operating temperature by selectively heating the collector, even when the collector receives substantially no radiation from the first radiation source.”

Mori is discussed above. Applicants respectfully submit that claim 32 is patentable over Mori because Mori does not disclose or suggest a method of manufacturing a device that includes – at least - maintaining the collector at a substantially constant operating temperature, even when the collector receives substantially no radiation from the first radiation source. Accordingly, Applicants respectfully request that the rejection to claim 32 be withdrawn.

In the Office Action, claims 2, 16, and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mori in view of Sogard (U.S. 2005/0099611). Applicants respectfully traverse this rejection.

Claim 2 depends from claim 1. As discussed above, claim 1 is patentable over Mori. Sogard does not make up for the deficiencies of Mori. Mori is discussed above. Sogard teaches the use of cooling channels and optional heaters for an EUV mirror to eliminate

global thermal distortion. (Sogard at [0004].) As described by Sogard, the “heat source creates thermal stresses in the mirror opposite to those created by the illumination irradiating the reflective side, thereby canceling their effects.” (Sogard at [0028].) Thus, Sogard teaches the use of a heat source while the mirror is being irradiated. Sogard provides no motivation to heat the mirror with the heat source when the mirror is not being irradiated.

Accordingly, Applicants respectfully submit that because the combination of Mori and Sogard do not teach all of the features of claim 2, claim 2 is patentable over Mori in view of Sogard, and respectfully request that the rejection to claim 2 be withdrawn.

Claims 16 and 17 depend from claim 14. As discussed above, claim 14 is patentable over Mori. Sogard does not cure the deficiencies of Mori. Mori and Sogard are discussed above. Neither Mori nor Sogard disclose or suggest a method of manufacturing a device that includes “maintaining the collector at a substantially constant operating temperature by selectively heating the collector, even when the collector receives substantially no radiation from the first radiation source,” as recited by claim 14.

Accordingly, Applicants respectfully submit that claims 16 and 17 are patentable over Mori in view of Sogard and respectfully request that the rejection to claims 16 and 17 be withdrawn.

In the Office Action, claims 9-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mori in view of Bade et al. (“Bade”) (U.S. 2003/0223136). Applicants respectfully traverse this rejection.

Claims 9-11 depend from claim 2, which depends from claim 1. As discussed above, claim 1 is patentable over Mori, and claim 2 is patentable over Mori in view of Sogard. As conceded by the Examiner, Mori does not disclose the heater which includes a second radiation source. Bade does not make up the deficiencies of Mori. Mori is discussed above. Bade discloses a heated mirror for a vehicle. (Bade at [0001] – [0003].) Bade does not disclose or suggest 1) “at least one heater for heating said collector when said collector receives substantially no radiation from said first radiation source,” as recited by claim 1, or 2) “said heater includes a second radiation source,” as recited by claim 2.

Accordingly, Applicants respectfully submit that claims 9-11 are patentable over Mori in view of Bade and respectfully request that the rejection to claims 9-11 be withdrawn.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited. If any point remains at issue which the Examiner feels may best be resolved

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through a personal or telephone interview, please contact the undersigned at the telephone number below.

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Respectfully submitted,

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